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Addendum

Contribution by workers and trade unions**

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I. Introduction

1. Trade unions have been increasingly active in sustainable development work since the adoption of Agenda 21 and in particular chapter 29 of the Agenda, which sets out the role of workers' organizations.

2. Trade unions contend that only the integration of environmental, social and economic development will deliver a more sustainable future. Our mission is to ensure that workers and the organizations that represent them are involved in this process — in the workplace and at the local, regional, national and international levels.

3. Trade unions are represented at the Commission on Sustainable Development by the International Trade Union Confederation, the Trade Union Advisory Committee to the Organization for Economic Cooperation and Development (OECD) — which have a combined membership of 175 million members in 155 countries and territories — and Global Union Federations, which represent workers in specific sectors.

II. Transport

4. Transport is considered in Agenda 21 in the context of several chapters, including, among others, chapter 9 on Protection of the atmosphere and chapter 7 on Human settlements. In addition, the General Assembly has noted that, over the next 20 years, transportation is expected to be the major driving force behind a growing world demand for energy. Trade unions see an urgent need for energy-efficient, affordable transport systems that provide important access to markets, employment, education and living standards — all of which are critical to the alleviation of poverty.

A. Constraints and obstacles

5. As stated in chapter 7 of Agenda 21: "transport accounts for about 30 per cent of commercial energy consumption and for about 60 per cent of total global consumption of liquid petroleum". This places developing countries under enormous pressure as they strive to accelerate development and raise living standards for their populations.

6. For workers in the transport sector, the past decades of cheap transport have imposed a heavy price in terms of pollution, energy consumption, safety, working conditions and living standards, leading to a reduction in the quality of urban and community life. Rapidly increasing motorization and, so far, insufficient investments in urban transport planning, traffic management and infrastructure are creating growing problems in terms of accidents and injury, health, noise and congestion. But in rural areas too, infrastructure development has been largely overlooked for the past 20 years. Market access and networks for the delivery of goods are vital for lifting poor people out of poverty and on to a sustainable growth path. Yet they are not accessible to many working in agriculture, for instance.

7. Massive changes in the organization of the world's transport industry are at the heart of the globalization process. The unit cost of the transport of goods has fallen

dramatically to below 1 per cent of total production costs, opening up new patterns of production and distribution and dramatically changing socio-economic life. Market pressures keep transport costs down and cheap transport is affecting clean air and the livelihoods of working people. Effective measures need to be taken to promote modes of transport for passengers and goods that are the most energy-efficient, with particular attention to the benefits of intermodality.

8. The multimodal nature of transport means that individual efficiencies cannot be considered in isolation. Only a planned approach, which combines measures to limit private car use, such as high taxation on fuel and vehicles and high road pricing, with fast, comfortable, affordable and efficient integrated bus, taxi and urban rail systems can solve this problem. The promotion and financing of such systems should be a central responsibility of public authorities.

9. The fundamental principle in planning for sustainable transport must be the internalization of external costs. Transporters should cover the total costs of transport — including costs such as congestion, pollution, general health, accidents and poor quality employment, which are currently paid by society as a whole. These measures need to be taken in connection with effective policies for the planning of land use and for the replacement of travel by private car, through the greater availability and use of public transport.[1]

10. Current patterns of transportation development are not sustainable. The evolution of transportation, such as maritime, aviation, road and rail transportation, is an inevitable part of development, but it is also a major driving factor in the world demand for energy and these modes of transport are also major emitters. The transport sector alone accounts for around one quarter of global carbon dioxide (CO_2) emissions and global transport energy-related CO_2 emissions are predicted to increase by 1.7 per cent a year from 2004 to 2030. The predicted road transport growth to 2030 is driven largely by the increased demand for mobility in developing countries, where growth rates are predicted to average 2.8 per cent a year. Coupled with rapid urbanization, transport-related emissions from urban areas are set to rise significantly.[2]

11. The obstacles to achieving sustainable transport systems are many and varied: economic, technical and institutional. The majority of countries rely too heavily on private transportation and there is insufficient investment in affordable public transportation for all. Barriers to the adoption of cleaner technologies in the transport sector are hard to overcome. Reducing emissions and developing cleaner fuel requires massive public and private investment.

12. A shift to a cleaner transport sector depends on changes to lifestyles and patterns. The demand for transportation in developing countries must be dealt with in a sustainable manner with land use and infrastructure being efficiently planned.

13. The path towards sustainable development must not replicate the mistakes of the maritime "flag of convenience" system, which allows employers to escape regulation at the national level, thereby depriving workers of basic rights and

[1] Trade Union statement to the fifteenth session of the Conference of the Parties to the United Nations Framework Convention on Climate Change, Copenhagen (7-18 December 2009).

[2] See United Nations Environment Programme submission to the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (2009), available from http://unfccc.int/resource/docs/2009/smsn/igo/045.pdf.

minimum levels of pay. In this maritime example, priority should instead be given to protecting and improving the working environment faced by seafarers and establishing a genuine link between ownership and the flag a ship flies.

14. Cheap transport creates a downward pressure on pay and conditions, which also harms the environment. An untrained or casually employed transport sector labour force can pose environmental risks. Even highly trained workers can be involved in accidents, with potentially disastrous environmental outcomes, if they are forced to work excessive hours. In the transport industry, achieving environmental goals goes hand-in-hand with achieving just and decent work.[3]

B. Possible approaches

15. The organization of transport workers is essential for improving working terms and conditions, reducing adverse health risks and increasing environmental protection. Casually employed or untrained workers in the transport sector must receive professional and vocational training in health and safety to avoid environmental disasters like oil spills and chemical waste problems and to protect themselves, others and the environment. A competent, well-educated and responsible working crew, with a thorough understanding of environmental as well as health and safety issues, is key to attaining sustainable development. There is an urgent need to implement the decent work agenda to ensure that new employment created to strengthen transport infrastructure and create efficient and affordable transport systems is characterized by safe working conditions, proper remuneration, adequate social protection and social dialogue.

16. Solutions must be approached through cooperation and technology-sharing, thereby rejecting further exploitation of the poorer regions by the richer countries and promoting sustainable mobility on a global scale. This means taking into account the different socio-economic characteristics of the regions of the world, as well as trade union priorities and aspirations.[3] The external effects of transport are transboundary. This is a global problem that requires global regulation.

C. Further actions

17. In order to reduce the impact on the environment and develop a more environmentally sustainable transport system, it is important to adopt an integrated and horizontal approach that incorporates regional, structural, social and economic policies.

18. Furthermore, there is a need to set binding targets that require supporting policy actions aimed at greenhouse gas emission reductions, in particular CO_2 emissions, in the following five areas: emissions from transport, air pollutant emissions, growth in transport, share of the individual modes of transport and noise pollution.

19. Trade unions are seeking to actively participate in environmental policymaking and implementation — this is a key message that unions want to convey to the

[3] David Cockcroft, "Shifting the costs", in *Green Growth for Jobs and Social Justice*, Global Unions Publication (Brussels, December 2009).

Commission on Sustainable Development. Transport trade unions consider it their role to focus on more environmentally sustainable transport systems and demand a policy that seeks to balance the social, environmental and economic pillars of sustainable development.[4] The Commission's review process gives unions this possibility, providing a voice for workers' suggestions and best practices.

Box 1

Aviation workers support "jobs and the environment"[3]

Workers in civil aviation recognize the need for a sustainable aviation industry, but reject a narrow view of the future that pits "jobs against the environment". Rather, the International Transport Workers' Federation (ITF) aviation affiliates prefer to work within the positive framework of jobs and the environment and see a number of opportunities.

The ITF Civil Aviation Section currently supports the inclusion of aircraft CO_2 emissions in the European Union Emissions Trading Scheme and calls for a similar scheme to operate on an international basis. It also supports aircraft manufacturers and suppliers that prioritize improvements in fuel efficiency and reductions in nitrogen oxide emissions.

ITF affiliates are also engaged in technical innovations to improve fuel efficiency. But unions know that the technical fix alone cannot guarantee long-term sustainability. Sustainability requires environmental targets to be underpinned by strong regulation. ITF is raising this issue in its capacity as a stakeholder in the International Civil Aviation Organization (ICAO).

Workers have to think long term, as well as short term, with a broader strategic perspective if they are to avoid bearing the cost of such changes. If the aviation industry is to achieve sustainable growth, the workforce, which delivers the service to the travelling public, must be a key partner in developing the safe working practices that will accommodate environmental change. It is essential that unions and employers engage on these issues in the workplace.

III. Mining

20. Coal and mineral mining has provided the basis for the development of modern industrial societies. Mining provides basic raw materials without which most goods could not be manufactured and much of the world's energy could not be supplied. Mining involves the extraction of non-renewable resources, often resulting in severe disruptions of the environment and communities, and has some of the most

[4] European Transport Workers' Federation: *Towards a Trade Union Vision on Sustainable Transport* (Discussion Paper).

dangerous working conditions in the world.[5] Coal provides 25 per cent of the world's energy — only oil provides more — and 40 per cent of the world's electricity. The challenges for mining lie in the "just transition" towards sustainable production methods, health and safety for workers and environmental concerns.

A. Constraints and obstacles

21. Mining is often in competition with other land uses, habitats or indigenous land claims. Aggressive mechanized methods of mining, such as "mountaintop removal", permanently and radically disturb the landscape. Mining operations use or contaminate large amounts of water. Disposal areas are frequently the targets of complaints of visual pollution and dust, or if in the form of tailings ponds, of the risk of release to water courses. Erosion and dust can result from mining operations, especially around open pits and tailings areas. The discharge or run-off of chemicals used in the mining process, as well as the dissolution of contaminants from tailings, can result in high concentrations of arsenic, sulphuric acid, heavy metals or other pollutants in groundwater and surface water. Abandoned mines are sometimes safety hazards, continuing sources of pollution or the cause of dangerous sinkholes. Modern mining operations utilize heavy equipment and the transport of materials and equipment over long distances. All this activity requires intensive energy inputs and thereby contributes to greenhouse gas emissions.[6]

22. The mining industry is criticized throughout much of the world for its poor performance on sustainability. Mining companies have long been known for their ruthless treatment of local populations and indigenous peoples, environmental destruction, poor labour relations and extracting huge wealth without sharing profits and contributing to the long-term development of communities. More recently, some of the worst practices have been modified by the major companies in the face of strong labour unions and environmental and community opposition. However, real problems remain. The track record of medium-sized and smaller mining companies is likely to be worse, although there is no substantive data on this.[5]

23. The widespread use of contract or agency labour at mines can undermine the very notion of sustainable development by condemning current workers and future generations in many countries to poverty, sickness and disease. It is unacceptable for any employer to use contract labour for the sole purpose of reducing wages and benefits and deterring unionization. The use of unskilled and casual workers also endangers the health and safety of unionized miners. Part of any employer's sustainable development policy should be to work with trade unions to phase out contract labour and regularize employment.[5]

24. In terms of occupational health and safety, the global mining industry is consistently one of the most lethal industries for workers. This is why trade union campaigns for the full implementation of the International Labour Organization (ILO) Convention concerning Safety and Health in Mines (ILO Convention No. 176) are so important. To date only 23 countries have ratified the Convention,

[5] World Conference for the Mining and Diamond, Gems Industries and Ornament and Jewellery Processing (DGOJP) Industries: *Report on research, activities and developments* (2008).

[6] International Federation of Chemical, Energy, Mine and General Workers' Unions (ICEM): *Sustainability — a Role for Labour, a Role for the ICEM* (June 2009), available from: www.icem.org/files/PDF/EN%20ICEMsustainability090518.pdf.

with Peru being the latest. Notable for their failure to ratify are key coal and metal mining countries. The ratification of ILO Convention No. 176 could dramatically improve laws and regulation in those countries where mine safety is weak. The same multinational mining companies sometimes present quite a different face in the developed world than they do in their operations in the developing world.[6]

25. According to ILO, although the number of people employed in mining only accounts for 0.4 per cent of the global workforce, this sector is responsible for over 3 per cent of fatal accidents at work: 11,000 accidents per year; 30 per day. These figures are underestimates, as they exclude unofficial estimates of fatalities in the informal sector and in small mines. There are no accurate figures on injuries where death does not occur, but suffice it to say that miners are subject to numerous physical and respiratory illnesses. There are also no official global figures on coal mine accidents, but media reports provide some estimates. In many countries, mine deaths and injuries go unreported owing to poor laws and regulations, along with widespread informal mining. The worst situation continues to be in China, which experienced 3,786 fatalities in 2007, representing a drop of 20.2 per cent from the previous year. Some have estimated that as many as 20,000 coal miners are killed each year in accidents. China's official fatality rate is still much higher than that of any other major coal mining country.[5] Fatal accidents also took place in recent years in India, Kazakhstan, Poland, the Russian Federation, South Africa, Ukraine and the United States of America.[5]

26. Mines are frequently located in isolated areas where mining companies can exert a great deal of control over their host communities, and are less likely to be subject to outside scrutiny. The voice of workers, through their unions, may be the only voice able to challenge the practices of the employer.[6] There is a strong link between a company's labour relations practices and its treatment of the environment and communities in which it operates. However, in the absence of a strong and independent trade union, it is difficult to obtain credible information on whether or not a company is attempting to respect labour rights, provide decent work conditions or adhere to environmental best practices and standards.

B. Possible approaches

27. In recent years, some mining companies have made efforts to improve their environmental performance and image through more efficient methods, better management of waste and tailings and stronger efforts to restore sites. This policy approach must continue.

28. Resources and energy will continue to be obtained through mining. Despite this crucial role, the mining industry's environmental and social performance threatens its economic sustainability. An effective mix of voluntary and regulatory instruments is essential if this sector is to meet the challenges of the twenty-first century. The union movement believes that some sort of international regulatory framework for extractive companies is needed. Voluntary corporate social responsibility initiatives are not enough — there must be third-party verification of behaviour, along with rewards and penalties for good or bad behaviour. In addition, countries hosting multinational mining companies (especially developing countries) need to have mechanisms to ensure that best practices, standards and decent work are followed and provide a dispute resolution process if they are not. An essential

part of sustainable social development processes is to ensure that violators are held accountable for their labour, environmental and human rights practices through strong systems of national regulation and international conventions (such as those of ILO) that include the right to organize.[6]

Box 2
Initiative for responsible mining assurance

The International Federation of Chemical, Energy, Mine and General Workers' Unions (ICEM) currently sits on the steering committee of the Initiative for Responsible Mining Assurance (IRMA), which was launched in Vancouver, Canada, in 2006 as a response by the mining and jewellery industries to mounting criticisms of mining practices, particularly in developing countries. Its purpose is to develop a voluntary system for the independent verification of compliance with environmental, human rights and social standards for mining operations. The intention to develop third-party independent standards sets IRMA apart from other efforts.

29. Miners and their trade unions bring a unique perspective not often recognized by either employers or non-governmental organizations. Workers fully understand the importance of keeping their jobs. At the same time, as residents of the communities where the mines are located, they understand that mining practices should be carried out in a way that protects the environment and contributes to long-term development. Miners with rights through trade unions and the ability to speak out without fear of retribution can provide accurate and comprehensive information on company practices at the mine and in communities.[5] Mining trade unions cannot ignore the environmental aspects of mining and should therefore be playing a leading role in advocating strong measures to reduce greenhouse gases and protect local environments, while ensuring better and more decent jobs in the mining industry.

C. Further actions

30. According to ILO, there are approximately 11 million workers engaged in mining throughout the world. Although there are no accurate statistics to measure union density in mining globally, the presence of significant coal mining unions in those countries where coal mining is a major part of the economy indicates that coal mining is highly organized. The most notable exception is China, where unions exist but do not function separately from the employers. In most coal mining countries, non-union coal miners can be found in smaller mines and in the informal sector. However, the contracting out of work in coal mines is also increasing.[5]

31. Providing safe conditions must be part of employer sustainability policies. Employers should join with trade unions to support the adoption of ILO Convention No. 176 in those countries where ratification has not occurred. Part III of the Convention committing both employers and labour organizations to set standards

should be implemented. An employer's treatment of his workers often reflects on the company's treatment of the environment.

32. Certain sectors, such as those linked to fossil fuel energy and other energy-intensive sectors will face significant changes in the global shift to a low-carbon energy and industrial future. This includes industries such as steel, iron, coal and aluminium, fossil-fuel based power generation as well as energy-intensive services, such as road transport. Therefore, it is of the utmost importance to support investment in low-carbon technologies and energy efficiency measures, retaining and developing viable low-carbon technologies, wherever possible, supported by skills and training programmes for a low-carbon, resource-efficient economy.[4] The transition that the mining industry will have to face should be just and can be a driver of sustainable economic growth and social progress, if properly planned in consultation with trade unions, in seeking alternative solutions built on solidarity, equity and people's needs.

Box 3
The first Global Agreement in the African mining sector[7]

> One of the world's leading gold producers, AngloGold and the 20-million strong international trade union federation, ICEM, signed an agreement in 2002 on the promotion and implementation of good human and industrial relations.
>
> The key theme underlining the agreement is the "development and sustainability of the gold mining industry worldwide" and the upholding and implementing of "good human resources and industrial relations practices". The promotion of and respect for human and trade union rights, health and safety, environmental protection and the promotion of good relationships with local mine communities are pivotal to the agreement.

33. By working together, unions and community and environmental organizations can ensure that mining employers engage in sustainable development. Local, national and international non-governmental organizations have played a leading role in putting public pressure on companies to improve their practices. Opening up a dialogue between trade unions and non-governmental organizations and seeking common ground will be important in promoting best practices by mining companies and lobbying for effective Government oversight.[5]

[7] ICEM news release (13 September 2002): available from www.icem.org/en/69-Global-Framework-Agreements/1000-AngloGold-signs-Global-Agreement:First-in-Mining-Sector-Africa.

IV. Chemicals

34. Over recent decades, the chemical and related industries, such as pesticides, pharmaceuticals, plastics and rubber, have grown rapidly, especially in emerging economies such as China and India, and are estimated to continue to expand throughout the twenty-first century. These are value-adding industries, which make a significant contribution to social and economic development. At the same time, the production, use and waste of these materials generate environmental and human health problems and their present working practices make unsustainable demands on the natural resource base.

A. Constraints and obstacles

35. Chemical hazards are a major cause of occupational mortality in the world. ILO[8] estimates that hazardous substances kill about 438,000 workers annually and that 10 per cent of all skin cancers are attributable to workplace exposure to hazardous substances.

36. But it is not only workers who suffer. Individuals and communities are also at risk through exposure to chemicals in the home and pollution of the environment.

37. The first key constraint is the lack of knowledge and information. A staggering 99 per cent of the total volume of marketed substances has not undergone in-depth assessment of the risks to human health and the environment.[9] Consequently, many hazardous chemicals are not classified as such and are sold without appropriate labels or safety data sheets.

38. A second constraint is the weak regulatory framework, which leads to a range of problems: irresponsible behaviour by employers; lack of enforcement of core labour standards — thus undermining the ability of the trade union movement to act on these issues; the lack of ratification and implementation of basic standards such as ILO Convention No. 155 on Occupational Safety and Health; and weak labour inspectorates.

39. In industrialized countries, while improvements still have to be made in large companies, the main area of concern is small and medium-sized enterprises, which barely enforce or apply existing legislation or good practice.

40. But it is in developing countries where the situation is particularly alarming.

41. Chemicals with highly toxic active ingredients, such as endosulfan and paraquat, which are banned in many industrialized countries, are still marketed in the developing world. Protective equipment is often not available, and information and training are mostly lacking.

42. Safety and environmental standards vary widely with some sites failing to implement even basic controls. Multinational enterprises deliberately relocate to countries with lower standards, using their economic power to influence host Government policies to ensure that regulation remains limited. These corporate

[8] International Labour Organization (ILO), "Facts on Safety at Work" (2005): www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/publication/wcms_067574.pdf.

[9] European Commission, White Paper: "Strategy for a future Chemicals Policy" (February 2001).

strategies mean that workers in developing countries are increasingly victims of the social, environmental and health and safety effects of dumping.

B. Possible approaches

43. Occupational health and the environment are two sides of the same coin — the measures adopted to protect workers' health will help to protect the environment and vice versa. The attainment of sustainable development requires coherent and ambitious policies aimed at implementing a preventative and precautionary approach to the management of chemicals.

44. First and foremost, there is a need to develop comprehensive policies. There are currently a host of legal, economic, technical and voluntary approaches for managing chemicals. But these are partial, addressing specific chemicals, or focusing on specific actions. A comprehensive policy should integrate the different approaches and focus on: all chemicals; promote sufficient chemical characterization and information on properties; provide public information; encourage substitution of the most hazardous substances; and prevent social and environmental dumping and illegal trafficking.

45. There is also a need to promote a culture of prevention. This should be based on the premise that all accidents can be prevented and guided by the principle that it is best to control a hazard at source or as close to the source as possible, either by elimination, isolation or substitution. Particular attention must be paid to chemicals that are carcinogenic, mutagenic and reproductive hazards, persistent, bioaccumulative and toxic chemicals and endocrine disruptors. Developing a culture of prevention depends on the following core elements:

(a) **The right to know:** workers exposed to chemicals have the right to information on the properties and impacts of chemicals through adequate labelling and safety data sheets;

(b) **The precautionary principle:** the precautionary principle must be applied to all new chemicals and technologies, including emerging nanotechnologies and nanomaterials industries, which must have reasonable and scientifically credible assurances of safety;

(c) **Participation:** a key challenge is to influence the chemical industry's decision-making, so that society's interests are properly considered. Involving chemical workers and their representatives in hazard and risk assessment and management through social dialogue provides one way to do this;

(d) **Awareness-raising:** campaigns, such as the trade union campaign the 28 April International Commemoration Day for Dead and Injured Workers (World Day for Safety and Health at Work), are vital for creating the space for dialogue on improving occupational health conditions and thereby advancing sustainable development.

Box 4
Collective bargaining: a tool for sustainable development

> Social dialogue encompasses all types of negotiation between representatives of Governments, employers and workers, including collective bargaining. While health and safety issues are largely governed by national laws, collective bargaining provides a mechanism for implementing these laws in the workplace. Furthermore, collective agreements can safeguard rights for workers that are not provided for by national law. Collective bargaining provides an effective means of raising occupational and environmental health standards and improving working and living conditions and thereby advancing sustainable development.

46. Another important possible approach is to focus on green and sustainable chemistry. These relatively new concepts need to be better integrated into research, negotiation and the production process, if sustainable development is to be attained.

47. Green chemistry refers to the search for synthetic routes, processes and products that have inherently less potential to damage the environment. Promoting green chemistry as an alternative to conventional chemical production processes, is essential not only for reducing the health and environmental risks, but also to maintain the millions of jobs it sustains, which benefit society.

48. Green chemistry is not the same as sustainable chemistry. Green chemistry speaks to the reduction of environmental impact. A sustainable chemical industry, on the other hand, respects green chemistry principles, but also behaves in a socially responsible manner that creates decent work, respects human rights and labour rights, and of course is economically viable. Labour unions desire a sustainable chemical industry, which implies that it is also but not only green. It must also perform to a high standard socially and be economically viable.

49. Opportunities for recycling and reusing chemical products are another area for further development. A large number of chemicals can be recycled and reused directly. For other substances, such as rubber, for which vulcanization makes the reprocessing of tyre rubber into new tyres almost impossible, alternatives need to be found. Tyres, for example, can be retreaded rather than scrapped or scrapped tyres can be reused in construction or as a raw material for new products such as ground rubber.

50. A final priority for the trade union movement is to support "just transition". Just transition aims to ensure that changes to current patterns of production and consumption in the shift to a greener economy are made in a manner that minimizes the stress on workers, their families and communities. Training, green investments, occupational health and safety standards, consultation with trade unions and research on the effects on workers of the transformation of the industry are all vital components of the strategy for delivering a just transition.

Box 5

The role of European Trade Unions in strengthening the regulation of chemicals[10]

European trade unions, led by the European Trade Union Confederation (ETUC) campaigned for an effective framework for safeguarding the environment and workers' health. The adoption of the European Union Regulation on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) represents an important milestone. Key draft provisions were, however, weakened or dropped as a result of lobbying by the chemical industry. For example, chemical safety reports, which are vital for protecting workers' health, are required for only one third of the number of chemicals compared with the figure originally envisaged — this means that workers are denied safety information for 20,000 chemicals.[11]

Box 6

A tripartite agreement on benzene in Brazil[10]

The National Tripartite Agreement on Benzene, concluded in 1995, provides a model of employer-union cooperation for sustainable development. Signed by industrial associations, Brazilian trade union centres, the Government and Fundacentro, the agreement requires companies and subcontractors to carry, store, use or handle benzene and its derivatives in a prescribed manner, to register its use with the Ministry and to define a "programme of prevention" of benzene's hazards in every workplace. In each plant, workers participate in a representative group of workers which monitors and enforces the Programme for Prevention of Occupational Exposure to Benzene. They also have equal representation on a Permanent National Commission for Benzene. Periodic seminars on Benzene organized under the agreement provide for its joint evaluation. http://www.sustainlabour.org/dmdocuments/ EN159-2008.pdf

C. Further actions

51. The international trade union movement calls on this review session of the Commission on Sustainable Development to support the following actions on chemicals:

(a) **Implement the Johannesburg Plan of Implementation:**

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[10] See United Nations Environment Programme and Sustainlabour: *Sound and sustainable management of chemicals — A training manual for workers and trade unions* (2008), available from www.sustainlabour.org/dmdocuments/EN159-2008.pdf.

[11] When produced in quantities of 1 to 10 tons.

- Shift the burden of proof for chemical safety away from workers, consumers, communities and the environment and on to manufacturers

- Substitute the most dangerous substances in line with the Stockholm Convention on Persistent Organic Pollutants

- Adopt the Strategic Approach to International Chemicals Management and its follow-up and implement the European Union regulation REACH;

(b) **Ratify and implement** all conventions, regulations, ILO standards and codes of practice regarding chemicals;

(c) **Link occupational health to environmental and public health policy and practice:**

- Reinforce ILO conventions and programmes on occupational health and safety

- Allow for differentiated approaches between developed and developing countries

- Use the link between occupational health and environmental and public health in occupational safety campaigns;

(d) **Apply the preventative and precautionary principles** in all matters relating to the use of chemicals and related substances, especially where knowledge remains inadequate, for example: multiple exposures, endocrine disruptors and nanotechnologies;

(e) **Support just transition** to ensure that workers are provided with safe and decent employment in the shift to a greener, more sustainable economy;

(f) **Increase the global knowledge base** so as to provide for the effective evaluation of the potential risks of hazardous chemicals throughout their life cycle;

(g) **Exchange and disseminate information** on safe chemicals management, including assessing alternatives, products and processes;

(h) **Pay particular attention to chemicals** that are carcinogenic, mutagenic and present reproductive hazards, persistent, bio-accumulative and toxic chemicals and endocrine disruptors;

(i) **Support research, development and implementation programmes** for a greener and more sustainable approach to the manufacture and use of chemicals;

(j) **Promote sustainable production and consumption patterns** by supporting cleaner production centres and the dissemination and transfer of technology.

V. Waste management

52. Millions of tons of agricultural, industrial and domestic waste are dumped in the earth's oceans and soils every year. The most serious sources of waste include heavy metals, pesticides, chlorinated compounds, such as polychlorinated biphenyls and radioactive material. The resulting degradation of coastal zones and fertile land threatens workers' livelihoods and puts the ecosystem out of balance.

A. Constraints and obstacles

53. Unsustainable waste management has enormous impacts on the health and environment of workers and their communities, with the worst effects still to come in the case of, for example, dioxins and furans.

54. Unsurprisingly it is the poorest people and communities that suffer first and foremost — located next to contaminated land or in areas of high air pollution, they are most exposed to risks.

55. At the international level, developing countries are recipients of environmentally polluting or health-damaging wastes, which are exported from industrialized countries, including a growing trade in illegally exported toxic wastes, as companies seek to avoid waste taxes and other waste disposal costs.

56. This massive and unjust externalization of costs not only transfers health and environmental risks to the most vulnerable, but also acts to impede the shift to cleaner and greener production that is so urgently needed for a more sustainable future.

57. Developing countries accept these practices in exchange for minimal income. Yet more often than not they lack the capacity to handle the waste in a safe and adequate manner. There are many examples of wastes being dumped in open spaces where children and poor women go in search of food, water and firewood.[12]

58. Despite numerous multilateral agreements governing the movement of dangerous substances — including the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal that came into force in 1992 and the adoption of various European directives — there is a lack of political will to implement commitments and sanction violations. A case in point is the Probo Koala marine catastrophe in 2006, which involved the dumping of 500 tons of toxic waste leading to the poisoning of thousands of people living around the port of Abidjan, Côte d'Ivoire.

59. Recycling activities, such as the dismantling of ships or electronic appliances, are also increasingly being transferred to developing countries, with similar results.

60. Turning to the waste management sector, liberalization and privatization over recent decades have led to an industry that is dominated by a small number of multinational companies. For many, job quality is low with workers carrying out dangerous, unskilled and low paid work.

61. A recent report on the impacts of privatization of public services found that:

> "cost cutting has become the main strategy companies adopt in response to the liberalization of markets. In labour-intensive services, this obviously mainly leads to attempts to reduce labour costs by reducing employment levels, even though, in most of the cases, direct layoffs are avoided. Other consequences include lower wages and the spread of precarious employment in some sectors and countries".[13]

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[12] International Metalworkers' Federation Action Programme 2009-2013, adopted at the 32nd International Metalworkers' Federation World Congress, Gothenburg, Sweden, 24-28 May 2009, available from www.imfmetal.org/files/09060811555979/AP2009-2013Final-English.pdf.

[13] Summary report of project: Privatisation of Public Services and the Impact on Quality, Employment and Productivity (PIQUE), Vienna, 2009.

62. Today, the waste management sector is experiencing these effects, with cut-throat competition exerting a downward pressure on workers' terms and conditions of employment and leading to increased job precarity. While the economic and financial crisis has led to further job losses, trade unions also recognize the potential for significant employment creation, through the creation of new green jobs.

63. Furthermore, trade unions are concerned that increased private sector involvement in the waste management sector is skewing investment towards large, capital-intensive and profitable waste management technologies, such as incineration, and away from labour intensive, less profitable activities such as recycling. A 2007 study on municipal waste management in the United Kingdom of Great Britain and Northern Ireland, for example, found that:

> "privatized companies are attracted to mechanisms such as Private Finance Initiative (PFI) (because of the reliable long-term revenue streams) and large industrial projects such as incineration facilities (because of the returns on investment). This inevitably squeezes options for recycling as a response to the Government's obligation under the European Union directive to reduce the amount of waste sent to landfill. The length of many of these contracts means that these effects will be long-lasting".[14]

B. Possible approaches and further actions

64. As an overarching principle, trade unions emphasize the need for approaches to sustainable development in the waste management sector to explicitly link environmental protection and public health with the health and safety of workers.

65. First, trade unions are committed to the waste hierarchy of prevention, minimization, reuse, recycling, the conversion of waste to energy and finally disposal. This means promoting less waste-intensive production methods, following the 3R (reduce-reuse-recycle) approach. This must not be based on voluntary measures — the evidence shows that Governments that have used regulation to encourage waste reduction have seen real improvements in the design of products.

66. Second, it is necessary to implement the "polluter pays" principle through the application of "extended producer responsibility", which extends a producer's responsibility for a product to the post-consumer stage of a product's life cycle. Violations should be enforced and severely sanctioned.

67. Third, there is a need to apply the proximity principle whereby waste should be treated as close to the source as possible. This includes controlling the trade in hazardous wastes through effective regulation and enforcement.

68. A fourth area for action concerns the need to ensure that the waste management industry is investing in green technologies. Here there is a need to examine the incentives created by existing ownership structures and financing mechanisms.

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[14] S. Davies, "UK Municipal Waste Management: From a Public Service to a Globalised Industry", *Competition & Change*, vol. 11, No. 1 (March 2007).

69. Finally, the trade union movement sees considerable potential for the creation of both green and decent jobs in the waste management sector. Green jobs are a first step towards the transformation to a greener economy and hold the key to achieving sustainable development for all. There is also a need to address the social dimension and improve the quality of jobs. Workers and their trade unions have a key role to play in both of these areas: improving workers' conditions; encouraging greater environmental responsibility by employers; collaborating in applying best practices to minimize waste; implementing new regulations and their enforcement; and encouraging the development of research in favour of technologies and products that are health and environmentally friendly.[15]

Box 7

Successful alliances: campaign against the scrapping of contaminated ships[16]

> The International Transport Workers' Federation and International Metalworkers' Federation have supported a Greenpeace campaign against the scrapping of contaminated ships in Asia, particularly in India. Some ships are contaminated with high levels of toxic and hazardous materials, including heavy metals and asbestos. Offshore scrapping pollutes the environment and endangers the health of the workers involved. Ships scrapped in Asia should be free of substances such as asbestos, lead, other heavy metal compounds, oily wastes and polychlorinated biphenyls. Shipowners should be responsible for rendering ships non-hazardous before breaking them up. There must be adequate safeguards for the environment and nearby communities.

VI. 10-year framework of programmes on sustainable consumption and production

70. The 10-year framework of programmes on sustainable consumption and production has several objectives. The present section concentrates on the first objective and examines the barriers to, and the means for, achieving and enabling a policy framework to promote sustainable consumption and production patterns.

71. Trade unions believe that the transformation of the current economic system requires a bold and ambitious approach that will drive the modes of production and consumption towards a socially equitable and environmentally viable society. Trade union understanding of sustainable development incorporates the importance of achieving social justice, as well as strengthening social dialogue and collective bargaining. These elements need to be better mainstreamed into a sustainable consumption and production framework.

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[15] United Nations Environment Programme, "Labour and the environment: a natural synergy" (Nairobi, 2007), available from www.sustainlabour.org/dmdocuments/EN90-2007.pdf.

[16] Based on Gallin, D. (posted in December 2006). "Trade unions and NGOs in social development: a necessary partnership". Global Labour Institute; available from www.globallabour.info/en/2006/12/trade_unions_and_ngos_in_socia.html.

72. The 10-year framework should aim to accelerate the shift towards sustainable consumption and production patterns in order to achieve social progress and a fair distribution of wealth, resources and economic development, which is commensurate with the carrying capacity of the ecosystem. The sustainable consumption and production framework must set out the policies that will drive production in a way that will provide social benefits — it must not be reduced to ensuring environmentally friendly consumer behaviour.

A. Constraints and obstacles

73. The current production model will not deliver sustainable development. The increasing levels of unequal wealth distribution, poverty, unemployment, natural resource degradation, disease and violence all testify to this.

74. Today's unsustainable production model has a host of damaging impacts on workers ranging from the lack of freedom of association; child or forced labour; gender discrimination; occupational health and safety hazards; and poverty and insecurity. These social elements of unsustainability are compounded by the impact of production on the natural resource base and the environment.

75. Trade unions consider that there are a number of reasons why there has been so little progress on sustainability since the adoption of Agenda 21.

76. The first is the misguided belief on the part of Governments in voluntary initiatives, or corporate social responsibility. In the face of the growing influence of the private sector, trade unions consider voluntary corporate codes of conduct, without accompanying accountability measures, to be a mere exercise in public relations.

77. The second, which is related to the above, is the progressively biased governmental decision-making process of recent decades, under the influence of lobbying by private sector interests and a shift to neoliberal policies of deregulation.

78. The third reason is that trade unions consider that the shareholder value model of corporate governance has a highly negative impact on sustainable development, given its focus on short-term returns on investment as the overriding aim of a company, to the exclusion of other factors and stakeholders.

79. The final reason for the lack of progress, according to trade unions, is that the increasing inequality between countries is not only a result of unsustainable patterns of production, but is also a driver of this process, as investment decisions are often determined by the search for lower labour and environmental standards.

B. Possible approaches

80. First and foremost, it is important to recognize that a "sustainable product" does not imply sustainable production per se — the method of production is key. Achieving sustainable production depends on performance across a number of different indicators including decent job creation, working conditions and skills development.

81. Furthermore, it is important to achieve a balance between regulatory and market-driven policies. World production has not become more sustainable since the

adoption of the Johannesburg Plan of Implementation. On the contrary, excessive reliance on voluntary initiatives and market-driven rules has resulted in increasing levels of violations of labour rights, poverty and unsustainable patterns of natural resource use.

82. For trade unions, regulation remains the fairest and most effective means of introducing sustainability. The agreement of internationally agreed standards on sustainable production and consumption, including tripartite sectoral standards, must be at the core of the 10-year framework of programmes.

83. Public regulation also has a key role to play in driving innovation and the creation of green and decent jobs: from the introduction of feed-in tariffs for promoting renewable energies, to the inclusion of rules for preventing chemical exposure based on the precautionary principle, public regulation has proven to be a major force in stimulating innovation in the private sector.

84. Also in this regard, trade unions consider that there is a need to address sustainability in the supply chain. Many agricultural, textile and manufactured products are produced through chains of subcontractors in developing countries where it is difficult to assess working conditions or identify the use of child labour.

85. The 10-year framework of programmes should apply the principle of the extended responsibility of enterprises. It should also recognize the role of trade unions in delivering social outcomes and helping to build greener and more sustainable supply chains. It should promote instruments aimed at improving standards along the supply chain, including the OECD Guidelines for Multinational Enterprises and the Global Reporting Initiative (GRI).

86. Moreover, the 10-year framework of programmes should also focus on small and medium-sized enterprises, which are responsible for most of the world's employment and natural resource use and are perpetrators of the worst violations of labour and environmental law.

87. Additionally, the 10-year framework of programmes should recognize the importance of trade unions whose presence in the workplace and role in collective bargaining at all levels — local, regional, sectoral, national and international — makes them uniquely placed to support the implementation of sustainable consumption and production agreements. The 10-year framework of programmes should in particular explore the role of international framework agreements as a tool for promoting sustainable development. These agreements have had measurable impacts in terms of improving the economic, social and environmental performance of multinational enterprises and are also important for the 10-year framework of programmes, in that they promote the better integration of sustainable development in trade union policies and practices.

88. Finally, citizens as consumers should be provided with the necessary information to allow them to choose between products on the grounds of sustainability, but within a range of products that achieve a minimum level of sustainability. This requires the right mix of regulation (providing a level playing field) and choice (based on personal views).

Box 8

International framework agreement with Chiquita in Latin America[17]

In 2001, the IUF (International Union of Food, Agriculture, Hotel, Restaurant, Catering, Tobacco and Allied Work) and Chiquita signed an international framework agreement on freedom of association, minimum labour standards and employment in Latin American banana operations. The agreement requires Chiquita to reaffirm its commitment to respect core ILO conventions,[18] continuously improve employment and working conditions of Chiquita employees and to consult with trade unions on issues that affect contracts and the volume of work. The agreement also ensures that "Chiquita will require its suppliers, contract growers and joint venture partners to provide reasonable evidence that they respect national legislation and the Minimum Labour Standards outlined in Part I of this agreement. The parties agree that the effective implementation of this provision is dependent upon a number of factors such as Chiquita's relative degree of influence over its suppliers and the availability of appropriate and commercially viable supply alternatives. Implementation of this part of the agreement shall therefore be jointly assessed by the Review Committee taking into account these factors". http://www.sustainlabour.org/ files/IFAs/IFA_Chiquita.pdf.

C. Further actions

89. A truly sustainable consumption and production policy should link economic growth with the creation of decent jobs and stimulate demand for, and supply of, sustainable products and services. The following policies should be supported:

(a) **Democratic governance, respect of core labour rights and adequate regulation** are the baseline for achieving sustainable production;

(b) **Decent work** should be at the core of a sustainable supply chain, as it helps to combat poverty, reduce vulnerability to economic, social and environmental changes and empower communities;

(c) **Effective regulation** in order to enhance green and decent job creation and sustainable production patterns and reduce occupational injuries, diseases and the environmental impacts of production;

(d) **A just transition framework** to protect workers from losing their jobs and livelihoods in the shift to the greener economy. This requires investment, economic diversification, education and skills development, social protection and social dialogue;

(e) **Trade union participation** in sustainable development in the workplace and at the local, regional, national and international levels and the promotion of core ILO conventions, the OECD Guidelines for Multinational Enterprises and the ILO

[17] See text at www.sustainlabour.org/files/IFAs/IFA_Chiquita.pdf.

[18] See www.ilo.org/global/What_we_do/InternationalLabourStandards/Introduction/ConventionsandRecommendations/lang--en/index.htm.

Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy;

(f) **Focus on small and medium-sized enterprises**, where workers face the hardest working conditions and where natural resource use and sustainability are a low priority;

(g) **Increase consumer awareness** and promote the core ILO conventions and the OECD Guidelines for Multinational Enterprises to deliver improvements, efficiency and sustainability for workers throughout the supply chain.

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Addendum

Contribution by business and industry**

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I. Introduction

1. Business is a central stakeholder and key player in bringing forward solutions across all of the issues to be considered at the eighteenth and nineteenth sessions of the Commission on Sustainable Development. The cluster of issues in this cycle have a particularly broad multisectoral and multidisciplinary significance for business and industry, and as such present challenges to identify, integrate and prioritize both past experience and necessary cooperative action. Moreover, there are connections with issues considered during previous cycles, which should be identified and explored.

II. Role of business and industry

2. Business and industry support responsible approaches to the diverse areas of transport, chemicals, mining and waste management, each of which generate different environmental impacts but all of which involve many stakeholders. Sustainability in these areas requires shared responsibility among all those involved along the life cycle. The relationships among these players are complex and require the strong engagement, partnerships and contributions of all involved.

3. Responsible behaviour by companies on environmental and social matters in these (and other) areas is both an imperative of good citizenship and a matter of self-interest. Healthy and developing societies create new business opportunities and new markets. Companies need to have and can help make possible: a healthy and educated workforce; prosperous consumers; a well-functioning infrastructure; societies free from ethnic strife or conflict; sound environmental management; and enabling environments conducive to enterprise.

III. Role of Governments

4. Governments can promote and enable investments in these areas by leveraging official development assistance, promoting technological cooperation and exploring innovative financing arrangements. Additional financial resources to renovate and expand transport systems and other key infrastructures are imperative. Donors, multilateral agencies and investors will all have to provide additional funds, particularly in developing countries.

5. Governments and donor agencies should assist innovative partnerships between local governments, the local and international private sector and local and international non-governmental organizations that use various sources of funding to jump-start and test shared-risk models.

IV. Impact of the global economic crisis

6. The fallout from the global economic downturn has undoubtedly changed the complexion of the implementation of Agenda 21 and the Johannesburg Plan of Implementation. As financing becomes more constrained, and both public and private sector resources encounter limitations, it is more critical than ever to set priorities and determine how resources can be leveraged and most cost-effectively

deployed. At the same time, "green stimulus" and other governmental efforts to provide resources towards job creation and investment in green sectors has been promising and, from a business standpoint, we encourage countries to ensure that these efforts strengthen the entire economy, and do not choose among "winners and losers".

7. The chemicals, transport and mining sectors each face clear challenges arising from the economic downturn, but in spite of these recent difficult circumstances, they have made solid progress towards improved performance, particularly in environmental areas. For the transport sector, climate change, energy, supply chain and security issues all have a central bearing on sustainability challenges. For mining, natural resource management and worker and community issues have been at the forefront of the agenda. In the chemicals area, sustainable chemistry, product stewardship and the ongoing broader deployment and sound practice of "Responsible Care" are the key issues. And of course, each of these sectors is a key player in numerous ways in the supply and value chains of nearly every other business sector.

8. Special purpose sectoral groups from the transport, mining and chemicals sectors, with a particular focused expertise to offer, will contribute more targeted views and input throughout the Commission on Sustainable Development cycle. More detailed views from specific sectors are presented in the annex to the present paper.

9. The eighteenth and nineteenth sessions of the Commission are particularly timely, in the light of current developments in key relevant treaties and initiatives, such as the second session of the International Conference on Chemicals Management (ICCM-2), the ninth meeting of the Conference of the Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal and the simultaneous extraordinary meetings of the Conferences of the Parties to the Basel, Rotterdam and Stockholm Conventions (the three main chemicals and hazardous waste treaties). The approaching anniversaries of the United Nations Conference on Environment and Development and the World Summit on Sustainable Development suggest a particular focus on the cost-effectiveness of implementation and priorities across the broad range of Agenda 21 and the Johannesburg Plan of Implementation. The need to re-examine issues and experiences in the light of economic and political changes is real. We welcome the decision to pursue planning for an Earth Summit in 2012, and look forward to joining the dialogue.

V. Broad approaches

10. Although the span of issues is quite broad, business and industry can point to some broad approaches that have been successful and relevant to the sectors at hand. There is no one single policy that will ensure sustainability, and markets, policy frameworks, the pace of technological innovation and consumer demand all play a role, as does implementation and the institutions and resources that support this implementation. For this reason, we wish to emphasize the importance of integrated policymaking, ongoing implementation and international cooperative approaches.

11. Restrictive trade policies that hamper innovation and market access for products that are deemed not to satisfy arbitrary criteria for their production and

components have a particularly negative impact on developing countries. These are matters of concern in the sectors under consideration, and we encourage the Commission to consider policies that work in synergy with open trade and investment to promote economic development and sustainability.

12. This paper focuses on broader multisectoral perspectives and linkages that will complement sectoral views. The annex contains specific input from several of the key sectors presented.

13. For business, the key areas for focus during this session of the Commission are:

(a) Enabling frameworks and integrated multisectoral approaches;

(b) Capacity-building for the implementation of eco- and resource efficiency;

(c) Supply and value chains working together through life cycle approaches;

(d) Stimulating and deploying innovation through partnerships.

A. Enabling frameworks and integrated multisectoral approaches

14. Although each sector is unique, and requires tailored assessment to understand its challenges and circumstances, it is also important to bear in mind that the transport, mining, chemicals and waste management sectors do not operate in a vacuum. Market (commodity, energy) and regulatory conditions matter in promoting eco- and resource efficiency in those industries.

15. Sound, enforced regulation and good governance that relies, to the extent possible, on sound science, risk management, the market and voluntary approaches that supplement legal requirements, are critical elements in enabling frameworks for sustainability. Creating an enabling environment within which enterprises of all sizes and sectors can develop, create jobs, invest and pursue technological innovation and cooperation, coupled with sound governance and policies to reduce barriers to international trade and foreign direct investment, constitutes a significant route out of poverty.

16. In this regard, we wish to underscore the importance of keeping a diverse range of energy options open — the need to maintain options open matters as society and business work in partnership to pursue more sustainable mobility options.

B. Capacity-building for implementation of eco- and resource efficiency

17. Business and industry strongly support integrated policymaking and international cooperative approaches in these areas. In this regard, they support continued business-to-business capacity-building and dialogue on eco- and resource efficiency, environmental management systems and cleaner production. Any "one size fits all" approach is incompatible with the great diversity that exists within business. Indeed, the great variety of principles and other voluntary initiatives of

individual companies attest to this diversity, are a resource of successful approaches, and should be encouraged.

18. Efficiency is a bottom line consideration that lends itself very well to the pursuit of sustainability, and which has been integrated by many companies with other considerations of cleaner production, life cycle thinking and waste minimization. These practices can make good business sense in keeping costs down and in enhancing competitiveness. Existing market drivers and competition already offer powerful incentives to improve performance in these areas and promote innovation. Technology solutions, management systems and policy frameworks exist today that support efficiency and better environmental practices, and technological innovation will add solutions over time. Both demand- and supply-oriented policies and approaches will be necessary and business will continue to play a role in both.

C. Supply and value chains working together through life cycle approaches

19. Business supports global efforts to assure the proper management of materials and products throughout their life cycle, through the collective and cooperative market-based efforts of Governments, industry and consumers at each of the multiple stages: resource extraction, manufacturing, distribution, use, recycling, ultimate disposal and so on.

20. More needs to be done to communicate the business advantage of such an approach, particularly in developing countries and to small and medium-sized enterprises. The global efforts of institutions such as the United Nations Environment Programme (UNEP), the Commission and others should be aimed at capacity-building to enable each country to put in place and implement initiatives to meet obligations under relevant internationally agreed standards and address the environmental, social and economic problems they each deem to be relevant priorities for their societies and ecosystems.

D. Stimulating and deploying innovation through partnerships

21. The most economically feasible ways to address the long-term sustainability challenges will require the development, commercialization and widespread dissemination of both efficient existing technologies and new, currently non-commercial technologies. Moreover, innovation will substantially improve the future performance of current and proposed technologies. Environmental management practices and systems are indispensable in taking practical steps to implement the best technologies and pursue continuous improvement.

22. Infrastructure development is a priority concrete area where public and private sectors can work together through public-private partnerships. For such partnerships to succeed:

(a) Legal frameworks should enable private entity entrance and operation in what are often State-controlled industries;

(b) The coordination of preparatory measures for efficient start-up and implementation of public-private partnerships is necessary;

(c) The allocation of risks through contractual agreements should be addressed. Project profitability is a vital prerequisite for private sector involvement, especially if the project requires long-term engagement.

VI. Cross-sectoral synergies with sustainable consumption and production

23. Business and industry has worked in support of the 10-year framework of programmes for sustainable consumption and production (the Marrakech Process), through the two United Nations partner organizations (UNEP and the Department of Economic and Social Affairs), in regional meetings, with national Governments, through business groups and in partnerships with other stakeholders.

24. In our view, the 10-year framework should recognize the fundamental and diverse roles that business plays in innovation, production, distribution, transport and marketing of products and services. Business, consumers and public authorities share the responsibility for fostering environmentally and economically sound production and consumption. Business itself is not just a producer, but also a consumer.

25. Business embraces a flexible life cycle approach to sustainable consumption and production, enabled by fair, open and equitable markets at the national and international levels. From a business perspective, sustainable consumption and production relies in large part on making the market work for the environment by producing more efficiently and consuming differently, thereby generating economic prosperity, a reduced environmental footprint, and increased societal well-being.

26. Based on business experience, sustainable consumption and production efforts have been most successful when they make markets work for sustainable development, and we wish to emphasize this dynamic relationship as a core theme in the review by the Commission at its eighteenth session. While attempting to reduce the potential negative impacts of consumption and production, the sustainable consumption and production review should also address how to provide benefits such as better products at better prices to meet the needs and aspirations of consumers.

27. Sustainable consumption and production is a flexible and living concept. The eighteenth session of the Commission, in its review, should avoid a single "one size fits all" idea of either a sustainable product or of the concept as a whole. Factors such as a growing population, equity issues and the diversity of the business community, which is made up of a wide range of enterprises of many nationalities, sectors and sizes, underscore the importance of an adaptable approach.

28. Key objectives for further developing and implementing sustainable consumption and production and the 10-year framework of programmes are innovation, information and integration. Business and industry have found that sustainable consumption and production are advanced through:

(a) Developing innovative products and production methods with reduced material and energy intensity;

(b) Informing consumers about products and services in support of environmentally aware consumption choices;

(c) Integrating and mutually reinforcing programmes and policies in a wide range of markets.

29. Enacting enabling policies, and removing impeding policies, should be the overarching goal in defining and carrying out a set of frameworks in support of sustainable consumption and production. Policy and implementation frameworks should seek to take into account all stages in the life cycle of production and consumption by:

(a) Encouraging innovation and ecodesign and facilitating market introduction of environmentally preferable products, technologies and techniques;

(b) Fostering cleaner and leaner production, including industrial ecology, dematerialization, and eco-efficiency;

(c) Removing barriers to gaining market acceptance for environmentally preferable products and solutions;

(d) Facilitating environmentally aware consumption, including eco-labelling, ingredient disclosure, life cycle analysis, and comparative risk analysis;

(e) Minimizing the carbon footprint associated with post-consumer waste by deploying integrated post-consumer waste management systems and policies.

30. The consideration of policies and their implementation should also seek to understand the contribution of business. National Governments and authorities and international governmental organizations should involve business and civil society expertise in advancing sustainable consumption and production, and more specifically in developing the Marrakech Process. Business and industry plays a key role in innovation, production and marketing of products and services, and it shares with consumers and public authorities the responsibility for fostering environmentally and economically sound production and consumption.

31. In the course of the 10-year framework, business should align itself with the following principles, in support of robust marketplace responses to sustainable consumption and production by businesses, in the dual role of consumers and producers:

(a) To engage producers and consumers in creating policies and programmes to make markets work efficiently for the environment, the economy and society; and to ensure that product information, including price, reflects the shared objective of encouraging markets to adopt sustainable consumption and production patterns;

(b) To enable business, across all sectors, and by engaging supply and value chains, to contribute to sustainable consumption and production solutions through research and development, technological and commercial innovation, investment and technology diffusion, product and performance standards development, and codes of practice;

(c) To ensure that policies and programmes do not close technology options as knowledge improves and innovation creates breakthrough opportunities;

(d) To enable and implement a broad range of cooperative policies harnessing complementary regulatory, voluntary and market-based approaches;

(e) To identify and deploy targeted incentives supporting market adoption of sustainable consumption and production;

(f) To identify and remove policies that act as disincentives and impediments to market adoption of sustainable consumption and production;

(g) To mobilize global commercial markets and value chains, in compliance with trade and investment rules, and other fundamental international frameworks; and avoid barriers to trade associated with the market introduction of environmentally preferable products, technologies and techniques;

(h) To recognize and align with national priorities and circumstances while promoting international cooperation to achieve sustainable consumption and production patterns;

(i) To foster synergy with other critical priorities, notably carbon emissions, energy and material supply and use, water usage, and access for development, job creation, economic growth and other pressing challenges facing producers and consumers worldwide;

(j) To avoid duplicating or undermining existing global, regional, and national policies and programmes in advancing the 10-year framework.

32. There are numerous success stories and actions that business groups will present at the eighteenth session of the Commission: for example, the material and energy content of products has seen steady improvements over time. Key industries from a range of sectors, as well as retailers, have taken major steps forward. Recently the International Chamber of Commerce produced a new global Framework for Responsible Environmental Marketing Communications to help marketers and advertisers avoid the mistakes of vague, non-specific or misleading environmental claims. There have also been learning experiences in regulatory settings, such as in the context of the European Union, which bear closer examination, in terms of their effectiveness and impacts on other countries and markets.

33. Business and industry look forward to participating with the Commission, Governments and other major groups in contributing to a better understanding on how to continue progress in the cycle ahead, and to focus implementation and resources where they will bring the greatest benefit.

Annex

I. Transport

1. All modes of transport are proactively developing and implementing industry-driven solutions to improve their environmental performance generally, and to reduce their emissions in particular.

2. While technology has a key role for reducing emissions for all modes of transport, also fundamental is investment in the development of infrastructure and better use of existing infrastructure.

3. For air transport, the industry is making great advances into the opportunities offered by technology such as revolutionary new plane designs, new composite lightweight materials, radical new engine advances, and the development of sustainable biofuels for aviation. Airlines will spend $1.5 trillion on new aircraft by 2020. Some 5,500 aircraft will be replaced by 2020, or 27 per cent of the total global fleet, resulting in a 21 per cent reduction in carbon dioxide (CO_2) emissions compared with current levels.

4. Sustainable biofuel for aviation could reduce CO_2 emissions by 80 per cent on a full carbon life cycle basis. The focus is on biofuels sourced from second or new generation (e.g. algae, jatropha, camelina) biomass. These fuels can be produced sustainably to minimize the impact on food crops and freshwater usage.

5. More efficient operations can also save fuel and CO_2 emissions. "Green Teams" from the International Air Transport Association (IATA) visit airlines and advise them on fuel and emissions savings measures and best practice. Improved operational practices, including auxiliary power unit (APU) usage, more efficient flight procedures and weight reduction measures will achieve a 3 per cent reduction in emissions by 2020.

6. The road transport industry, recognizing the role that road transport plays in economic, social and environmental progress and in accordance with the International Road Transport Union (IRU) strategy for achieving sustainable development based on innovation, incentives and infrastructure (3 "i" strategy), has taken up its responsibilities by significantly reducing toxic and non-toxic emissions by up to 98 per cent, which has helped to significantly improve air quality.

7. The globalization process has led to an increase in tourism and trade and thus transport, and therefore to an increase in fuel use and, consequently, CO_2 emissions, but it must be recognized that road transport is the only mode of transport that can provide door-to-door service and that apart from urban distribution and short-distance road passenger transport, commercial road transport is and will remain dependent on oil, with no economically viable alternative in sight.

8. Finally, overall transport accounts for 30 per cent of CO_2 emissions, while the commercial road transport industry is responsible for 3 per cent of total CO_2 emissions. However, inadequate road infrastructure can easily triple the fuel consumption of a heavy commercial vehicle.

9. Taking into account the above, the road transport industry, represented by IRU and its member associations have in fact adopted a voluntary commitment, on the basis of innovative technologies and practices, to reduce CO_2 emissions by 30 per

cent by 2030 — calculated as transport performance in ton-kilometre (tkm) and passenger-kilometre (pkm) and related to the base year 2007 — through means such as:

(a) Investments in innovative engine and latest vehicle technology, which can contribute to a reduction in fuel consumption and consequently CO_2 emissions of more than 10 per cent;

(b) Driver training, as provided by the IRU Academy and others, which can reduce fuel consumption and consequently CO_2 emissions by up to 10 per cent;

(c) Innovative logistic concepts, such as intelligent transport systems (ITS) and optimized weights and dimensions of heavy commercial vehicles, which can equally reduce fuel consumption and CO_2 emissions by more than 10 per cent.

10. With regard to maritime transport, the international shipping industry is firmly committed to playing its part in reducing emissions of carbon dioxide and greenhouse gases. One challenge is that shipping, like all modes of transport, is a servant of world trade. The total emissions from shipping are thus determined to some extent by the expected growth of the world economy (and population) between now and 2050.

11. The consensus of opinion within the global shipping industry is that it may be possible for shipping to reduce the CO_2 emitted per ton of cargo transported 1 kilometre (tkm) by perhaps 15 to 20 per cent between 2007 and 2020, through a combination of technological and operational developments, as well as through the introduction of newer and bigger ships designed to the new Energy Efficiency Design Index of the International Maritime Organization (IMO). In the longer term, the shipping industry is also exploring a number of alternative fuel sources to help reduce CO_2 emissions. For shipping, it is important to note the significance of IMO agreement on MARPOL annex VI: Regulations for the Prevention of Air Pollution from Ships, which will regulate emissions of nitrous oxides and significantly reduce the amount of sulphur oxides and volatile organic compounds emitted by ships and hence the associated health hazards. Also important is the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, adopted at a conference in May 2009, which will help ensure that ships that have reached the end of their life are disposed of safely.

12. In sum, the transport industry as a whole is committed to a process of continuous improvement of its environmental performance.

II. Chemicals

A. Views from the chemical industry

13. The global chemical industry has been an active participant in international sustainable development processes since the 1992 United Nations Conference on Environment and Development in Rio de Janeiro, Brazil. The International Council of Chemical Associations (ICCA) — the worldwide voice of the industry — has held special consultative status with the Economic and Social Council since 1998, coordinating the industry's participation in major summit meetings, such as the 2002

World Summit on Sustainable Development, and at regular sessions of the Commission.

14. The chemical industry has a unique role to play in promoting sustainable development. It is committed to preserving our resources for future generations through reducing emissions, conserving energy and developing sustainable materials, technologies and business practices. In addition to being committed to achieving sustainable outcomes, the industry helps to provide sustainable development solutions for other industry sectors, including energy, information technology, construction and the waste management sector. Chemistry is also instrumental in meeting human needs, including food and clothing, housing, transport and communications.

B. Progress made

15. In 2002, the chemical industry joined with other stakeholders and Governments at the World Summit on Sustainable Development in Johannesburg, South Africa, in establishing a goal that, by the year 2020, chemicals will be used and produced in ways that lead to the minimization of significant adverse effects on human health and the environment. The industry continues to embrace this goal and work actively towards its fulfilment.

16. As part of efforts to reach the 2020 goal, ICCA participated in the formulation and adoption of the Strategic Approach to International Chemicals Management at the International Conferences on Chemicals Management in 2006 (ICCM-1) and 2009 (ICCM-2). The Strategic Approach both acknowledges the essential contribution made by chemicals to modern society and recognizes that there is room for improvement in the management and sustainable use of chemicals. The global chemicals industry is committed to the successful implementation of the Strategic Approach. Indeed, the core policy objectives of the Strategic Approach, relating to risk reduction, knowledge and information, governance, capacity-building, and illegal traffic, have directly shaped the industry's efforts to achieve the goal of the World Summit on Sustainable Development.

17. The chemical industry's efforts towards achieving the 2020 goal have been primarily directed through two industry-led initiatives. The Responsible Care Global Charter and the Global Product Strategy, introduced at ICCM-1 in 2006, reflect the industry's commitment to elevating the global standard of product safety, harmonizing the safe management of chemicals and promoting sustainable outcomes.

18. The Responsible Care Global Charter addresses sustainable development and public health issues with respect to the use of chemical products. It highlights the industry's commitment to continuous improvement and greater transparency in environmental, health and safety performance. Responsible Care, which is currently implemented by 53 associations, has been widely lauded for its achievements. Former United Nations Secretary-General Kofi Annan described it as an "inspiring model of self-regulation that other industries should consider following". The Responsible Care programme is the centrepiece of the chemical industry's global commitment to sustainability, and the Responsible Care ethic is also being spread across the supply chain through partnerships with upstream and downstream suppliers and customers. More information on Responsible Care and the

Responsible Care Global Charter can be found at www.icca-chem.org/Home/ICCA-initiatives/Responsible-care/.

19. The Global Product Strategy is designed to advance the industry's product stewardship performance, measure that performance and improve communication and transparency about chemical hazards, risks and appropriate safe handling along the value chain. It aims to develop tools to address public concerns regarding chemicals in commerce. It is also designed to support national, regional and international chemicals management policy expectations. The Global Product Strategy works hand-in-hand with the Responsible Care Global Charter in the improvement of product stewardship throughout the supply chain. For more information on the Global Product Strategy, visit www.icca-chem.org/Home/ICCA-initiatives/Global-product-strategy/.

20. ICCA implementation of these two programmes has resulted in measurable success across the full spectrum of policy objectives since 2006. To take just a few examples, the industry has:

(a) Defined best practices for a base set of hazard and exposure information adequate for conducting chemical safety assessments;

(b) Developed a set of global product stewardship guidelines for use by member associations and companies to accelerate the implementation of their chemical management programmes;

(c) Adopted a global Responsible Care Governance Process to assure greater accountability for performance and the upholding of the Responsible Care ethic;

(d) Provided capacity-building projects in a number of developing countries in Africa, Asia and the Pacific, Latin America, and in countries with economies in transition;

(e) Secured support from more than 75 additional global company chief executive officers for the Responsible Care Global Charter and Global Product Strategy. These companies join the list of 79 companies represented at ICCM-1;

(f) Extended the Responsible Care network to include the Russian Federation and other countries in Eastern Europe; established a pilot project with domestic companies in China; and is exploring an initiative in the Persian Gulf region;

(g) Established new partnerships with Governments in developing countries;

(h) Participated in a scientific inquiry to address new and emerging health and environmental concerns under the Long-range Research Initiative;

(i) Reported global industry progress in a transparent manner through Responsible Care.

21. The chemical industry has also made important contributions to sustainable development in the areas of energy efficiency and reducing greenhouse gas emissions. The industry is the principal supplier of energy-efficient materials worldwide, from insulation to materials for wind and solar power. Through Responsible Care, the industry has also improved energy efficiency and reduced greenhouse gas emissions in our own operations.

22. Chemical industry technologies also make alternative energy possible, protect and clean the world's drinking water and other natural resources and help lower greenhouse gas emissions. An ICCA life cycle analysis study released in 2009 (based on independent analytical work by the consulting firm McKinsey and Company, and validated by the Öko Institute) reveals that greenhouse gas emission savings enabled by the chemical industry are more than double the industry's emissions, in other words products of the chemical industry enabled greenhouse gas savings two to three times greater than their emissions.

23. Finally, ICCA members partnered with Governments and other stakeholders during the negotiation of key international treaties such as the Stockholm Convention on Persistent Organic Pollutants and the Rotterdam Convention on Prior Informed Consent, and members have played an active role in their implementation. ICCA members were also active leaders and partners in transforming the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction from concept to reality.

C. Constraints and obstacles

24. ICCA commitment to enhancing the sustainability of the global chemical industry through Responsible Care and pursuing the 2020 goal of the World Summit on Sustainable Development has also identified several obstacles and constraints to achieving those objectives. Perhaps the most significant constraint is the lack of capacity in certain parts of the developing world to effectively manage chemicals. This lack of capacity can take several forms, for example lack of appropriate expertise, lack of data and scientific information, lack of resources and lack of infrastructure. ICCA is working with other Strategic Approach stakeholders to address these gaps through capacity-building and other relevant initiatives, but while important progress has been made, significant challenges remain in this area.

25. A further challenge is ensuring that mechanisms are in place to ensure effective chemicals management across the supply chain and throughout the product life cycle. This means ensuring that producers, suppliers and end-users have access to relevant product safety information and incorporate that information in their business operations. The chemical industry has made important progress in strengthening product stewardship and developing sustainable business practices through Responsible Care and the Global Product Strategy, but more remains to be done both within the industry and through additional cooperation with other industry sectors, Governments and intergovernmental and non-governmental organization stakeholders, in order to reach the 2020 goal.

D. Lessons learned and best practices for further implementation

26. The chemical industry's experience in seeking to advance sustainable development and chemicals management objectives in a range of international forums has facilitated new assessments of challenges faced and possible ways to address them. For example, the capability gaps in chemicals management regimes in certain countries identified above have highlighted the need to promote transparent, science-based and cost-effective regulatory regimes around the world, leading ICCA to develop a set of principles for chemicals management systems (available from

www.icca-chem.org/ICCADocs/2006_10_ICCA%20advocacy%20principles.pdf) based on a combination of regulation and industry-led initiatives.

27. ICCA has also developed and made publicly available a set of product stewardship guidelines (available from www.icca-chem.org/ICCADocs/Product%20Stewardship%20Guidelines%20-%20Final.doc) to help improve chemicals management and product stewardship throughout the supply chain. An important adjunct to this is putting these guidelines into action, and ICCA member companies have been active in delivering and supporting activities to build capacity in the developing world. For examples of these activities, see www.icca-chem.org/ICCADocs/Capacity_Building_2009.pdf and www.icca-chem.org/ICCADocs/ICCA_Progress_Report09_final.pdf.

28. While significant progress has been made towards reaching the 2020 goal of the World Summit on Sustainable Development, there is still much to be done. The Strategic Approach remains the primary vehicle for efforts to reach the 2020 goal, and ICCM-2 resulted in agreement on a strengthened framework (agreement on rules of procedure, creation of a subsidiary body, a stronger role for regional processes) to help facilitate these efforts. Going forward, the chemical industry supports the further strengthening of the Strategic Approach, including through adequate resourcing, to enable it to effectively monitor progress and encourage national efforts towards reaching the 2020 goal.

E. Further planned actions

29. The chemical industry is committed to continued progress on sustainable development and safer chemicals management in the coming years. The Global Product Strategy includes a 2018 target date for companies to have fully assessed the safety of their chemicals in commerce and an interim 2012 target for companies to report on and discuss their progress in making these assessments. In addition, ICCA is committed to reporting on approximately 15 to 20 more product stewardship performance metrics in the future.

30. By 2020, ICCA member companies aim to have:

(a) Established a base set of hazard and exposure information adequate for conducting safety assessments for chemicals in commerce;

(b) Enhanced the global capacity to implement safety assessment practices and safe management procedures, especially in developing countries;

(c) Shared relevant product safety information with co-producers, Governments, and the public;

(d) Worked across the value chain so that suppliers and customers can effectively evaluate the safety of their products and enhance their performance;

(e) Made product safety summaries on chemicals publicly available;

(f) Extended their monitoring and reporting structure by including additional metrics to quantitatively track progress and support continuous improvement in the sound global management of chemicals.

1. Views on chemical issues from the mining sector

31. Robust and integrated chemicals management policies are a vital component of the commitment of the International Council on Mining and Metals (ICMM) to a more sustainable future. Indeed, ICMM understand that managing chemicals, including minerals and metals throughout their life cycles in a responsible way is an important aspect of sustainable development. The challenge was recognized in Agenda 21 at the United Nations Conference on Environment and Development in Rio de Janeiro and was reaffirmed in the Plan of Implementation of the World Summit on Sustainable Development.

32. The World Summit on Sustainable Development in 2002 recognized that minerals and metals are essential for modern living. Many of these chemicals perform essential roles such as providing shelter or nutrition. Indeed there are few aspects of modern society that do not rely on the use of minerals and metals to some extent.

2. Commitment to sound chemicals management

33. On 11 May 2009 in Geneva, ICMM unveiled Minerals and Metals Management 2020 — an action plan for chemicals management in our sector (available from www.icmm.com/page/13781/icmm-launches-minerals-and-metals-management-2020-strategy-). The plan, launched at the Second International Conference on Chemicals Management (ICCM-2), is the fulfilment of a commitment made by ICMM at ICCM-1, in Dubai in 2006, in support of implementation of the Strategic Approach. The significance of 2020 is the aspiration that chemicals, including minerals and metals, be "used and produced in ways that minimize significant adverse effects on human health and the environment by 2020" and is enshrined as the overall goal of the Strategic Approach.

34. For ICMM members, a global approach to chemicals management is essential. However, it is also important to note that the Strategic Approach must be based on a broad, life cycle approach embedded within the context of sustainable development. At the heart of Minerals and Metals Management 2020 are 23 actions, grouped into four themes which correlate with four of the overarching objectives of the Strategic Approach: risk reduction; governance; capacity-building and technical assistance; and knowledge and information. Approved by the Council of chief executive officers, the action plan requires ICMM to develop policy, deliver action and partner more broadly than ever before with others involved in the life cycle of minerals and metals. While challenging, this approach will not be unfamiliar to our members as our action plan is built upon the principles and operating platform of our Sustainable Development Framework and our Materials Stewardship programme.

35. The ICMM Sustainable Development Framework (see www.icmm.com) is based largely around tackling the issues identified in the landmark Mining, Minerals and Sustainable Development project. The Framework comprises three key components: (a) a set of 10 principles and a corresponding commitment by member companies to their implementation; (b) a commitment to report progress in the implementation of the principles and other high-level commitments in accordance with the guidelines of the Global Reporting Initiative; and (c) a commitment to third-party assurance of members' reporting.

36. An integrated approach to the responsible production and use of the minerals and metals (chemicals) produced by ICMM member companies is an important element of the ICMM Sustainable Development Framework.

37. The materials stewardship concept involves caring for and managing the production and use of minerals and metals along the value chain to maximize net benefit, minimize losses and conserve resources to actively contribute to sustainable development. For ICMM members, materials stewardship is about:

(a) Understanding the social, environmental and economic impacts of a material as it moves through its life cycle from mining to use and through to the end of its life;

(b) Developing relationships/partnerships with other actors along the life cycle to help ensure beneficial and appropriate use of materials and to minimize or eliminate risks to human health and the environment;

(c) Taking action to ensure that, for the part of the life cycle they control, appropriate and effective stewardship activities are undertaken, and for the areas where they are not in direct control but have influence, they work with other actors in the life cycle to ensure they also do their part.

38. ICMM has published a guidance document to support the implementation of materials stewardship in the minerals and metals supply chain and is in the process of developing a complementary toolkit (available from www.icmm.com/page/1183/maximizing-value-guidance-on-implementing-materials-stewardship-in-the-minerals-and-metals-value-chain).

3. Chemicals management through the framework of materials stewardship

39. The ICMM Sustainable Development Framework and the materials stewardship concept provide a robust policy platform that recognizes the specific properties and characteristics of minerals and metals as well as the important role they play in society. Chemicals management is seen as a vital component of materials stewardship and developing sound practices in this arena is a key mechanism for the industry to support sustainable development.

40. Accordingly, work is ongoing in a number of key areas outlined below.

Mercury

41. One of the principal chemicals management issues for the industry to address at the international level is the stewardship of mercury. Mercury is ubiquitous among metalliferrous sulfide ores and the processing of these ores is known to constitute one of the primary anthropogenic sources of environmental mercury pollution. Control of such emissions and the subsequent management of mercury-containing waste is therefore a key challenge for parts of the mining and metals sector.

42. ICMM has expressed support for a global strategy on mercury risk management at the level of the United Nations and has published a position statement that advocates actions for its own members under a mercury stewardship programme (available from www.icmm.com/page/12173/icmm-commits-to-mercury-stewardship).

43. ICMM will enhance its contribution to the global effort by sharing information and expertise and by encouraging reciprocal public and private sector mercury management activities at the local and national levels in countries where our members have a significant presence. An example of this type of approach can be found in the support already provided by some ICMM member companies towards the implementation of low- to no-mercury technologies in the artisanal and small-scale mining sector.

44. Our members' willingness to contribute to international efforts to reduce mercury risks through the implementation of materials stewardship demonstrates that ICMM is committed to tackling health and environmental issues on a broader basis than site-specific measures, while seeking to promote sustainable uses of minerals and metals across the globe.

Metals risk assessment

45. Metals are natural inorganic components of the earth with specific chemical characteristics that often differ markedly from those of organic chemicals. Understanding these characteristics is a key factor in ensuring that potential health and environmental risks are adequately assessed and managed. With cross-commodity collaboration, ICMM is facilitating the development and sharing of leading-edge technical concepts through the risk assessment guidance for metals projects. These collaborative projects aim to provide the regulatory community at the regional and international levels with scientific and regulatory guidance on the most advanced status of environmental and human health risk assessment concepts for metals. The projects have consolidated existing experience and recent progress made with environmental risk assessment methods, concepts and methodologies for use in chemicals management programmes and standard-setting processes (available from www.icmm.com/page/1185/metals-environmental-risk-assessment-guidance-merag and www.icmm.com/page/1213/health-risk-assessment-guidance-for-metals-herag).

46. This multi-stakeholder approach to documenting the "state of the science" has facilitated broad acceptance of the outputs and the environmental guidance has for example been used by the European Commission in drafting metals-specific guidance for its new Regulation on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH). It was also recognized as a valuable source of information by the Environmental Protection Agency of the United States of America, in its Framework for Metals Risk Assessment, published in 2007.

47. The publications are considered to be "living documents" that will be supplemented and updated as new challenges emerge and the science progresses.

Capacity-building for the implementation of new chemicals management systems

48. Implementing new regulatory systems creates a significant challenge for the mining and metals industry, but offers significant opportunity for setting the right basis for future conditions for the marketing, use and control of our products, and presents challenges for industry as well as Governments. Through the collaboration of leading companies, commodity and national associations, the industry has been building capacity for implementation of two new systems in particular.

49. Those systems are the new European Regulation on the Registration, Evaluation, Authorization and Restriction of Chemical Substances and the globally harmonized system of classification and labelling (GHS) of the United Nations. The industry is preparing the necessary steps to ensure that both REACH and GHS can be implemented in a cost-efficient and timely manner. This has included a series of training seminars hosted in major cities around the world as well as the publication of specific guidance for industry. The latest guidance document published in November 2009 focuses on the classification of ores and concentrates, the raw materials for the production of minerals and metals (available from www.icmm.com/library/oresandconcentrates).

50. This capacity-building is an ongoing initiative. The latest such workshop on chemicals management took place in Beijing in November 2009. This brought together industry and policymakers from within China, a country where chemicals management policy is rapidly evolving in response to domestic and international challenges.

51. The industry has also been active in dialogue with Governments and policymakers, including work at the level of the United Nations towards the development of the Strategic Approach, with the European Commission in support of technical policy development under REACH and with the United Nations as well as many national Governments regarding the globally harmonized system of classification and labelling.

Life cycle thinking

52. Life cycle approaches are vital to managing chemicals and there are important business, environmental and regulatory benefits to be gained through their use. We want to see the development of generic life cycle tools and protocols for metals which work across a number of different industries and foster acceptance that minerals and metals can contribute to sustainable products. We are aiming for common thinking among producers of metal commodities and practitioners of life cycle assessment in order to establish a basis for enhanced reputation and credibility for the relevant approaches for metals and minerals. ICMM is partnering with organizations such as UNEP and the Society of Environmental Toxicology and Chemistry (SETAC) to improve life cycle assessment methodologies.

End-of-life management

53. Metals can be recycled with no inherent degradation in properties and exploiting this is a key component of their sustainable use. For ICMM, engaging in recycling activity is an important aspect of the commitment to materials stewardship, whereby companies extend their interest beyond the plant gate and consider the whole life cycle.

54. Within the metals industry, the extent to which metals are recycled and the properties that make them recyclable are well known. However, the facts surrounding them and their recyclability are not well known or appreciated in decision-making circles, the media, and by the public in general. While current public opinion strongly favours recycling, most attention is given to paper and plastics. Possibly because data and information on the recycling of metals are lacking, society's perception can be that metals are environmentally less attractive than other materials.

55. Additionally, we recognize that wastes and by-products need to be managed in a sustainable way — the mercury management programme established by Newmont Mining is a good example of stewardship that encompasses not only products but potentially hazardous waste streams too (available from www.beyondthemine.com/2006/?l=2&pid=5&parent=19&id=171).

56. Ultimately, we need to create increased awareness and encourage implementation of appropriate policies among member companies and other stakeholders. In all areas ICMM is working to ensure that companies, scientists and policymakers have access to the most robust and appropriate concepts and tools for assessing minerals and metals.

F. Contribution of metals to sustainable development

57. Metals are well suited to the sustainable development agenda as they are durable materials that, in theory, can be recycled infinitely. Indeed, metals share many characteristics that favour their continued and expanded use by society in pursuit of sustainable development, for example:

(a) Aluminium offers a combination of strength with exceptional lightness;

(b) Copper is valuable for its electrical and thermal conductivity, great tensile strength and resistance to corrosion;

(c) Zinc has a low melting point so it can easily be cast into intricate shapes. It is used in large amounts as a surface coating that protects iron and steel from corrosion and rusting;

(d) Nickel in steel provides toughness, strength and ductility over a wide range of temperatures;

(e) Lead is heavy, dense and very malleable; it can be used as a shield against radiation and has useful electrochemical properties;

(f) Iron goes mainly into steel, which is used in building construction, shipbuilding and automobile bodies.

Further information is available from www.icmm.com/page/1355/a-world-of-metals-finding-making-and-using-metals-second-edition.

G. The challenge

58. For the mining and metals industry the challenge is to ensure that materials (chemicals) are produced and used in a way that minimizes impact on the environment and society while maximizing their positive contribution. This is no longer a challenge that stops at the factory or mining site gate. As suppliers of essential materials, our industry is by its very nature tied to value chains and life cycles that we do not always control. Impacts can occur anywhere in the life cycle of a chemical or material and we therefore share the responsibility to act with others.

59. It is a commitment that starts at the highest level and permeates down to individual countries, companies and organizations. It requires robust chemicals management policies at all levels, based on sound science and supported by all stakeholders from Government to industry to civil society.

III. Waste management

60. Business and industry support flexible, socially acceptable, environmentally sound and cost-effective integrated waste management, based on sound scientific data, including risk and cost-benefit analyses. In recent years, industry has made considerable efforts to improve the recyclability, design, standards and properties of its products to reduce and manage waste. Industry will continue to improve production methods and the standards of its products. Governments should assure that policies encourage industry to make further progress.

61. A sound and harmonized definition of waste/non-waste should be in use. Global trade in recyclable materials and access to recycling facilities worldwide is essential to economic development and reduction in final disposal. The expanding restrictions for transfrontier movements of secondary raw materials and measures that disrupt trade in the context of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal have hampered the essential trade of recyclable materials and the reasonable and integrated use of recycling facilities. At the same time, we have seen that sound recycling can be a component of "green economy" efforts, and as such should be encouraged.

62. One example of both the challenge and opportunity in this regard concerns "e-waste". As rapid innovation and changing fashions make products quickly obsolete, the amount of waste electrical and electronic equipment (e-waste) is growing. Between 20 and 50 million tons of e-waste are produced worldwide every year. Business and multi-stakeholder initiatives and partnerships have been established to address these issues. One example is the Global e-Sustainability Initiative, which aims to ensure these products are disposed of responsibly and material is reused or recycled wherever possible.

63. The objective for all sectors is to move from managing risks to encouraging waste minimization, more efficient use and more extensive reuse of materials by viewing recyclable wastes, such as e-waste, as valuable resources. For example, recycling more of the materials in used equipment, including precious metals, reduces the environmental impact from its disposal and reduces the need to extract more raw materials from the ground. This, in turn, reduces the associated environmental and social impacts of mining, tying in with addressing supply chain issues.

64. In the case of information and communications technologies, the industry does not have direct control over a lot of equipment, such as computers and mobile phones, when they reach the end of their useful lives. Some companies already have take-back schemes in place, but there needs to be a wider perception and implementation of shared responsibility along the entire supply chain. For example, users should return products for recycling.

65. The Electronics-Tool for Accountable Supply Chains (E-TASC) is a web-based system for information and communications technology companies to manage their supply chains in an efficient manner. In 2008 the Global e-Sustainability Initiative developed an end-of-life management tool that will be integrated into the existing E-TASC self-assessment questionnaire for suppliers. Specific criteria cover collection, recycling, reuse and disposal. This will help the member companies of the Global e-Sustainability Initiative to ensure e-waste from their own operations is handled responsibly.

66. Waste can be an important source of energy. The practical and reasonable use of alternative and environmentally recommended fuels, for example biomass resulting from the pulp and paper industry, should not be restricted. The increased landfilling of valuable fuel resources can by no means be considered to be environmentally effective. It is important that high standards of waste management are achieved and that the range of options available is kept as wide and flexible as possible.